



Your roots to success...

NARSIMHA REDDY ENGINEERING COLLEGE

UGC-AUTONOMOUS INSTITUTION

An Autonomous Institute
NAAC Accreditation 'A' Grade
Accredited by NBA
Approved by AICTE, Affiliated to JNTUH

Department of Artificial Intelligence & Machine Learning

1. SYLLABUS

23AM602 : DATA ANALYTICS

CourseCode	Category	Hours/ Week			Credits	Maximum Marks		
		L	T	P		CIE	SEE	TOTAL
23AM602	Professional Course	3	0	0	3	40	60	100
Contact Classes:45	Tutorial Classes:15	Practical Classes: Nil				Total Classes:60		

Pre-requisites:

1. A course on "Database Management Systems".
2. Knowledge of probability and statistics.

Course Objectives:

1. To explore the fundamental concepts of data analytics.
2. To learn the principles and methods of statistical analysis
3. Discover interesting patterns, analyze supervised and unsupervised models and estimate the accuracy of the algorithms.
4. To understand the various search methods and visualization techniques..

Course outcomes:

1. Understand the impact of data analytics for business decisions and strategy
2. Carry out data analysis/statistical analysis.
3. To carry out standard data visualization and formal inference procedures
4. Design Data Architecture
5. Understand various Data Sources.

UNIT-I

Data Management: Design Data Architecture and manage the data for analysis, understand various sources of Data like Sensors/Signals/GPS etc. Data Management, Data Quality(noise, outliers, missing values, duplicate data) and Data Processing&Processing.

UNIT -II

Data Analytics: Introduction to Analytics, Introduction to Tools and Environment, Application of Modeling in Business, Databases & Types of Data and Variables, DataModeling Techniques, Missing Imputations etc. Need for Business Modeling

UNIT - III

Regression - Concepts, Blue property assumptions, Least Square Estimation, Variable Rationalization, and Model Building etc. Logistic Regression: Model Theory, Model fit Statistics, Model Construction, Analytics applications to various Business Domains etc.

UNIT- IV

Object Segmentation: Regression Vs Segmentation - Supervised and Unsupervised Learning, Tree Building Regression, Classification, Overfitting, Pruning and Complexity, Multiple Decision Trees etc. Time Series Methods: Arima, Measures of Forecast Accuracy, STL approach, Extract features from generated model as Height, Average Energy etc and Analyze for prediction

UNIT-V

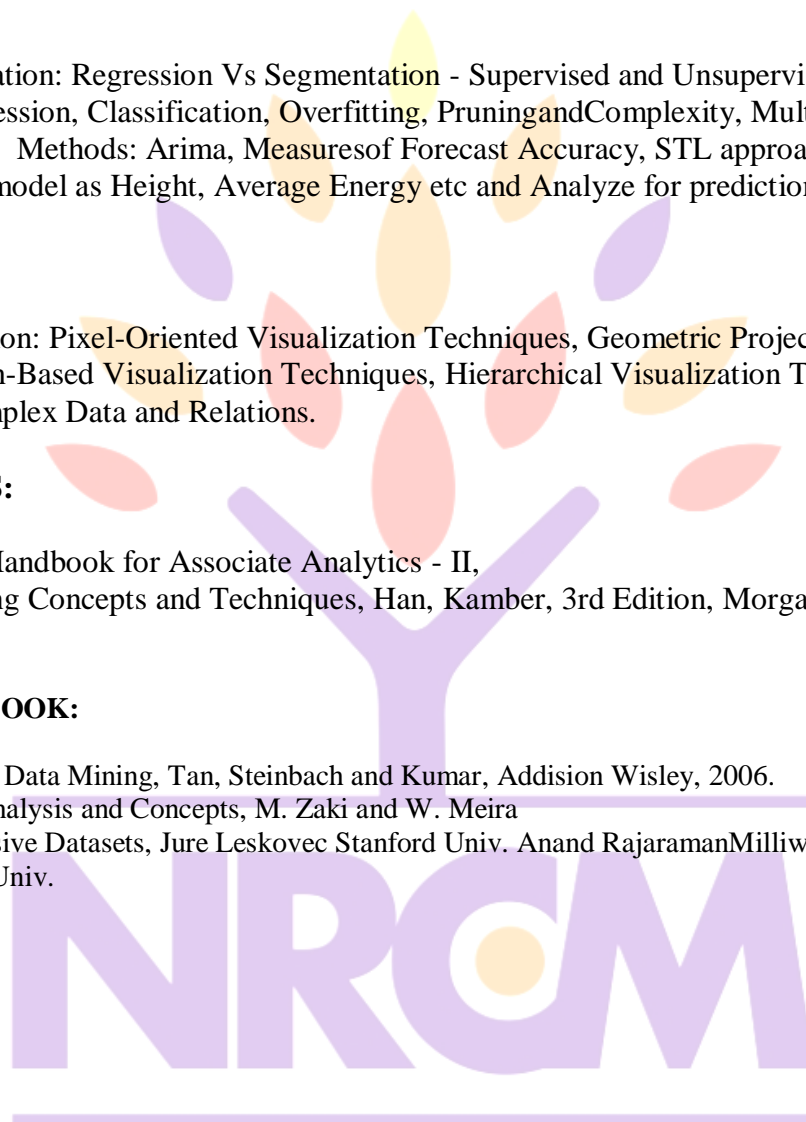
Data Visualization: Pixel-Oriented Visualization Techniques, Geometric Projection Visualization Techniques, Icon-Based Visualization Techniques, Hierarchical Visualization Techniques, Visualizing Complex Data and Relations.

TEXT BOOKS:

1. Student's Handbook for Associate Analytics - II,
2. Data Mining Concepts and Techniques, Han, Kamber, 3rd Edition, Morgan Kaufmann Publishers.

REFERENCE BOOK:

1. Introduction to Data Mining, Tan, Steinbach and Kumar, Addison Wesley, 2006.
2. Data Mining Analysis and Concepts, M. Zaki and W. Meira
3. Mining of Massive Datasets, Jure Leskovec Stanford Univ. Anand Rajaraman Millway Labs Jeffrey D Ullman Stanford Univ.



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